TREES MAGAZINE

A Shapely New Red Maple Selection For Street Use (Selection #154)

Fire As a Predisposing Factor in Canker Diseases — *P. P. Pirone*

The Power of Water in Plant Propagation — *James S. Wells*

September-October, 1953 — *The Journal of American Arboriculture* — Vol. 13. No. 6

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ALONG THE WAY With .... EDW. SCANLON

■UGH—TOO MUCH—now the BOYS ARE acclaiming the AUGUSTINE ELM as the "GREATEST AVENUE TREE IN THESE UNITED STATES"—there AINT NO SUCH ANIMAL and this AMERICAN ELM definitely isn't it IN ADDITION to being SUSCEPTIBLE to DUTCH ELM DISEASE and PHLOEM NECROSIS, with a NATURAL CASE OF PHLOEM INFECTION on record, it has WEAK "V" CROTCHES, grows to 90 FEET, grows TOO FAST and consequently DEVELOPS A BIG TRUNK and BIG ROOT SYSTEM. It possesses ALL THE BAD points I DON'T WANT in a STREET TREE.

■ **I WISH that guy WAGNER, H. S. THAT IS, would MOVE TO NEW GUINEA. I thought I HAD A DILLY in a recent article saying the word "ABACADABRA" "wasn't in the dictionary." HE SENT A DIME TOWARD the purchase of a WEBSTER, POINTING OUT that the word is SPELLED "ABRACADABRA"—O.K. I've GOT A DICTIONARY alright but WEBSTER COULD BE WRONG—just once—so I'll BUY A GOOD TEN CENT cigar. THANKS HAROLD.**

■ A RECENT MOVIE ON TV showing some POLITICAL ASPECTS of events in EAST AND WEST BERLIN GERMANY revealed an INTERESTING PHASE of CULTURAL LIFE in the WESTERN SECTOR. Many STREETS THRUOUT THE CITY had been NEWLY PLANTED with STREET TREES—one of the streets APPEARED TO BE the one famous as UNTER DEN LINDEN, which as I recall, FUNNY BOY ADOLPH had CHOPPED DOWN. This is sure a SAD COMMENTARY on the ATTITUDE DISPLAYED in MANY AMERICAN CITIES on the IMPORTANCE OF STREET trees—the MOST IMPORTANT phase of CITY PLANNING.

■ **BUD (YOUNG CHARLIE) IRISH has spent a COUPLE OF WEEKS at home and he is COMING ALONG beautifully—a couple more weeks of MAMA IRISHES cooking and THEY'D HAVE TO RENT a BOX CAR to get him back TO WASHINGTON, where he has SEVERAL MONTHS of convalescence at WALTER REED HOSPITAL before he GETS THAT PAPER.**

■ Well the OLD MASTER is WINDING up that OLD PAINT BRUSH again. The RED MAPLES, VIRGINA CREEPER and SUMACH have the JUMP on MOST STUFF so far around here, and THEY ARE BEAUTIFUL. The PHELODENDRONS at the RANCHO have turned a GORGEOUS YELLOW, which should be an ADDED INCENTIVE to more widespread USE OF THIS FINE TREE on STREETS.

■ **OLD GRANDPA SHIELD dropped into the SHADE TREE CONFERENCE, fresh off the BOAT FROM HONOLULU, all decked out in a PINEAPPLE HAT and a KAMEHAMEHA SHIRT.**

■ THE ASHES too have been BETTER COLORED than ever THIS FALL—in fact JUST LOOKING out at some and they are SPECTACULAR, APRICOT, PLUM AND YELLOW. What's the CAUSE OF the SLOW DECLINE that's getting the WHITE ASH?

■ **There's a BIG CONFERENCE cooking up for NEXT MARCH on TREES, STREET LIGHTS and OVERHEAD WIRES—The American Street Tree and Utility Conference—A TOP BRASS get-together to QUIT FOOLING AROUND and all GROW UP. More about it later.**

■ Someone PULLED A DILLY on JACK ROBINSONat the N.S.T.C. He opened his BUNDLE OF CATALOGS to pass out to THE UNWARY about his HARDIE SPRAYERS when ZINGO he finds out THEY ARE writen in ESPANOLA.

■ **If YOU LADS in the BOSTON AREA haven't been in the ARNOLD ARBORETUM lately you had better BUCKLE ON YOUR ROLLER SKATES and take off. There is a SPECIMEN OF SORBUS HYBRIDA in FULL BERRY that is ABSOLUTELY MAGNIFICENT. This is the OAKLEAF MOUNTAINASH — its DARK GREEN FOLIAGE AND HOLLY-RED BERRIES are really something. I DON'T KNOW when I've seen a MORE BEAUTIFUL TREE—again I sez, WHY CAN'T YOU BUY IT?**

■ There's ANOTHER MOUNTAINASH I saw at the ARNOLD ARBORETUM on a RUSH TRIP several weeks ago—its SORBUS ALNIFOLIA—another SINGLE LEAF SPECIES—DARK GREEN FOLIAGE and NICE RED BERRIES. Neither of these TWO SORBUS LOOK LIKE the COMMON ONE so generally seen, but EACH IS VASTLY SUPERIOR as an ornamental EITHER FOR HOME OR STREET.

■ **SORRY I missed DON WYMAN on my visit to the ARBORETUM, he was AWAY SPEECHING, but MESSERS COGGESHALL AND HOWARD performed a VERY MUCH APPRECIATED personal CONDUCTED TOUR of the grounds.**

■ Attended a COMMITTEE MEETING of the CONN. TREE PROTECTIVE ASS'N at NEW HAVEN and met quite a BUNCH OF SKINNERS and other GENTLEMEN. AL DIMOND and HAROLD PERKINS sat in—it was something about TREES AND UTILITIES.

■ **The MASTER POLITICAN was there ED THE CONNELL, and of course JOE DIETERICH the CONNECTICUT BOY who MADE GOOD in GREENWICH and AL MESERVE the CONNECTICUT BOY who MADE GOOD in CHICAGO—where he was ELECTED PREZ of the N.S.T. CONFERENCE.**

■ Looked over some of BERT CRANN'S nice "TAILORED TREE" plantings in NEW HAVEN—very nice—since the BIG ICE STORM the EMPHASIS is GOING TO BE on SMALL STREET TREES. Bought some NICE SHOES on the YALE CAMPUS too—WHAT A PICNIC its going to be BREAKING THEM IN.

■ **Had a NICE TOUR of BOSTON STREET TREES with ART ENGLISH, SUPT. OF PARKS. They have used a lot of LITTLELEAF LINDENS (T. Cordata) there with GOOD EFFECT. Saw a short avenue of CLIPPED ONES at BOSTON COLLEGE—also a beautiful parkway with MAJESTIC EUROPEAN BEECHES that must be 80 OR 90 YEARS old. BOSTON IS RICH IN TREES.**

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TREES MAGAZINE
7621 Lewis Rd., Olmsted Falls, Ohio

The Editors of TREES invite discussions, comments and all types of literary materials pertaining to trees and tree preservation from any person engaged either in the scientific advancement or commercial development of the field.

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■ Did YOU EVER hear of "GOLDEN BOY" BILL COLE the PAINESVILLE CHLOROTIC—if you HAVE ever been WITHIN A MILE of him you have.

■ **Talked to OUR GOOD FRIEND JACK O'BRIEN the STUMP REMOVER boy who is recovering nicely from a SPUTTERING TICKER. I think ALL HE WANTS is a GOOD REST—how ABOUT IT JACK.**

■ FRANK KORPICK, ASS'T. CITY FORESTER of BUFFALO spent a day GOING OVER some of our TAILORED TREE PLANTINGS several weeks ago. A STREET OF SWEET GUMS looked especially good—SURPRISED ME TOO.

■ **DON'T FORGET to send in a CHANGE OF ADDRESS if you move—IT HELPS assure PROMPT DELIVERY.**

■ AN ENTOURAGE from COLUMBUS OHIO, consisting of MESSERS DIETZ (PARK SUPER), ROSEBROOK AND SMITH stopped for a day to LOOK AT SOME STREET PLANTINGS. Things were fairly WELL LEAVED as yet so it DIDN'T LOOK TOO BAD.

■ **PAUL TILFORD and ESTHER dropped by THE RANCHO on THE MAESTROS return from A BOSTON TRIP—just shortly BEFORE I LEFT FOR THERE—hope that MIDNIGHT SNACK didn't KEEP YOU AWAKE all night.**

■ DATES for the 3rd PLANT PROPAGATORS SOCIETY meeting are DEC. 10-11-12, WADE PARK MANOR, CLEVELAND—this year.

Sept.-Oct., 1953 **Journal of the National Arborist Association** Vol. 13—No. 6

EDWARD H. SCANLON, Editor
7621 Lewis Rd., Olmsted Falls, Ohio
ADams 5-2357

"No place is complete without trees. A home without trees is charmless; a road without trees is shadeless; a park without trees is purposeless; A COUNTRY WITHOUT TREES IS HOPELESS."

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Out On A Limb

NOTHING IS PERFECT—NOT EVEN A TREE

The first sentence of Dr. Cynthia Westcotts latest book "Garden Enemies" tells a story that we think needs elaboration for the benefit of the planters—planters of all forms of plants as a matter of fact, but for our purposes, specifically street tree planters.

"Keeping plants healthy means providing them with optimum cultural conditions and warding off their more important enemies." This sentence in the foreword of Dr. Westcotts book is rather simple but should tell anyone that you can't have your cake and eat it. It implies that there is no plant that does not need some care, and this is certainly true of street trees. It says that if we have the intelligence to plant trees we should have the intelligence to know what they need to keep them healthy, and what insests or diseases we must guard their health against.

We see so many examples all around us of street trees being planted and then being completely forgotten. If a person acted in this manner upon becoming a parent—that is give the new-born babe a nice warm basinette, maybe with casters so he could get around, then shoved him out on the street to shift for himself it would be somewhat on the ridiculous side, also homicidal. While of course you would go to jail for this sort of act, it probably wouldn't be a bad idea if we had a law that would send delinquent tree planters to the pokey also. There is so much of it that sometimes one wonders if maybe it isn't the right thing to do.

Of course we know it isn't. The trouble is that this is the easy way and too many seek the easy way of doing things. To plant a street, or streets of trees, and expect them to attain the beauty and civic value we had visualized, when we planted them, without constant spraying, mulching and other cultural practices, is absurd. To do the job correctly requires work and energy and constant supervision. It is much easier to do it the wrong way.

This looking for the easy way is probably the answer to why some people want a tree that has no insect or disease troubles, requires no watering or feeding or pruning, never drops leaves or fruit or bark; will grow like a weed, but still not be brittle or develops bad crotches. What a dream, but there ain't no sech animal. The street tree planter must learn to evaluate a tree on the basis of its assets and liabilities. Sometimes even if the liabilities are heavy, one asset may be the quality that is desired to give a pleasing effect. It may require a little more effort to impart to the street this particular quality, of say, a spectacular flowering tree that has maybe one or two shortcomings. Such practice works we know, but few seem to have the energy and imagination to do their job in such a manner.

You will never find a disease or trouble free tree—you will seldom, if ever, get a 100 per cent stand in a planting, but if you work just a little harder and apply sound rules of cultural practice you will get a tremendous amount of satisfaction from something out of the ordinary, and a job well done.

Plant Propagators Society Third Meeting Cleveland

Apparently firmly established as an organization filling a long felt want in the nursery field the Plant Propagators Society announces its program for the third annual meeting. This meeting will be held in Cleveland, Ohio, as were the two preceding, on Dec. 10-11-12 at the Wade Park Manor.

After last year's meeting it was found necessary to close this coming meeting to members and guests who have been invited as potential members. It is the purpose of the Society to maintain a high standard of membership qualifications. Mr. James S. Wells, D. Hill Nursery, Dundee, Ill., is President of the Society, Dr. L. C. Chadwick, Ohio State University is Vice President, and Edward H. Scanlon, Editor TREES Magazine is Secretary-Treasurer.

The program for this, the first three-day meeting of the Society follows:

Third Annual Meeting—Plant Propagators Society Wade Park Manor Cleveland, Ohio December 10-12, 1953

THURSDAY, DECEMBER 10

9:00-12:00 REGISTRATION
10:00- BUSINESS MEETING. Executive Committee, Room ??
10:00- BUSINESS MEETING. Membership Committee, Room ??
1:30- 2:15 **Some Facts and Theories Concerning Compatibility in Relation to Plant Propagation.** Dr. Roger U. Swingle, USDA, Worthington, O.
2:15- 2:30 Discussion
2:30- 5:00 DEMONSTRATIONS: Moderator: Richard Fillmore
8:00-10:00 **Get Acquainted Smoker.**

FRIDAY, DECEMBER 11

Morning Session:
ROUND TABLE ON JUNIPERS. Moderator: Dr. William E. Snyder, Cornell University, Ithaca, New York.
9:15-10:00 **Fundamentals of Juniper Propagation.** Dr. William E. Snyder.
10:00-10:30 **Junipers from Cuttings.** Pieter G. Zorg, Fairview Evergreen Nursery, Fairview, Pennsylvania.
10:30-10:40 Recess.
10:40-11:15 Grafting Junipers.
11:15-12:00 Open Discussion of Juniper Propagation.

Afternoon Session:
ROUND TABLE ON MAGNOLIAS. Moderator: Professor Robert P. Meahl. Penn State College, State College, Pennsylvania.
1:15- 1:45 **Recorded work on the Propagation of Magnolias—a review.** Professor Robert P. Meahl.
1:45- 2:10 **Magnolias from Seed.** Fred Galle, Ida Casons Gardens, Chipley, Georgia.
2:10- 2:50 **Magnolias from Cuttings.**
2:50- 3:00 Recess.
3:00- 3:40 **Magnolias from Grafts.** Charles Hess, Hess Nurseries, Mountain View New Jersey.
3:40- 4:10 Open discussion on Magnolias.

Evening Session
8:00-10:00 Plant Propagation Question Box.

SATURDAY, DECEMBER 12

Morning Session:
ROUND TABLE ON DECIDUOUS SHRUBS FROM HARDWOOD CUTTINGS. Moderator: Dr. L. C. Chadwick, Ohio State University, Columbus, Ohio.
9:15-10:00 **The Fundamentals of Propagating Deciduous Shrubs by Hardwood Cuttings.** Dr. L. C. Chadwick.
10:00-10:30 **Hardwood Cuttings of Deciduous Shrubs.** Louis Vanderbrook, Manchester, Conn.
10:30-10:50 Open discussion.
10:50-11:00 Recess.
11:00-12:00 Business Meeting of the Society.

Afternoon Session:
ROUND TABLE OF SOFTWOOD CUTTINGS OF DECIDUOUS SHRUBS. Moderator: Dr. John P. Mahlstede, Iowa State College, Ames, Iowa.
1:15- 2:15 **Principles of Rooting Softwood Cuttings of Deciduous Shrubs.** Dr. John P. Mahlstede.
2:15- 3:00 **Shrubs from Softwood Cuttings.** Leslie Hancock, Woodland Nurseries, Cooksville, Ontario.
3:00- 3:10 Recess.
3:10- 3:55 **The Use of Root Inducing Substances on Greenwood Cuttings.** H. F. Harp, Head Gardener, Experimental Station, Department of Agriculture, Morden, Manitoba, Canada.
3:55- 4:30 Open discussion on softwood cuttings.

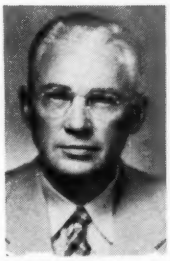
Evening Session:
7:00- 9:00 ANNUAL BANQUET. Speaker: S. L. Emsweller, Head, Division of Ornamental Plant Crops and Diseases. Subject: **Some Recent Developments in Horticultural Research.**

UNIV OF WASH ARBORETUM

First plantings in Arboretum: spring, 1953

Acer Buergerianum
Acer cissifolium
Acer Hersii
Acer pensylvanicum
Acer saccharum
Alnus glutinosa var. pyramidalis
Alnus glutinosa var. imperialis
Amelanchier grandiflora
Betula Raddeana
Buddleia Colvilei
Castonopsis chrysophylla
Cercis canadensis f. alba

Elected President National Shade Tree Conference



AL MESERVE
President, National Shade Tree Conference

The National Shade Tree Conference at its meeting in Chicago, August 17 to 21, elected Albert W. Meserve to act as President for the coming year. Al Meserve's home is at Danbury, Connecticut, where he conducts a tree service business known as The Albert W. Meserve Company.

Al is a graduate of the University of Massachusetts with a Bachelor of Science degree. In addition to his work in the tree preservation field he finds time for many other activities. He is a past president of the Connecticut Tree Protective Association; past president of the National Arborist Association, Inc.; past president, Danbury Community Chest; chairman of the Danbury Park Board Commissioners; and maintains an active interest in Boy Scout work, having been president of the local council for the past six years.

Clematis columbiana
Cornus Hemsleyana
Cornus paucinervis
Many Cotoneaster species
Cyrilla racemiflora
Eurya chinensis
Fraxinus Mariesii
Hovenia dulcis
Jasminum Parkeri
Libocedrus chilensis
Magnolia mellicomata X Campbellii
M. Sprengeri var. elongata
M. grandiflora x virginiana
M. Schiedeana
Malus Halliana var. spontanea
Melus Lemoinei
Malus platycarpa
Nothofagus Dombeyi
Nyssa sylvatica
Parrotiopsis Jacquemontiana
Pieris Forrestii
Pinus ayacahuite
Pinus yunnanensis
Prunus caroliniana
Pseudotsuga Wilsoniana
Quercus acutissima
Salix babylonica
Sorbus alnifolia
Sorbus terminalis
Stachyurus himalaicus
Syringa Tigerstedtii
Vaccinium Arctostaphylos
Viburnum grandiflorum

Brian O. Mulligan

The "Power Of Water" In Plant Propagation

By James S. Wells
President
Plant Propagators Society
D. Hill Nursery, Dundee, Ill.

Although the use of water in all aspects of plant propagation is certainly nothing new the application of water by controlled means and the development of different techniques based upon these methods is a more recent advance which holds great promise, particularly for the propagation of more difficult plants.

The control of water while plants are being manipulated to increase them vegetatively has been a major governing factor in the methods used by good propagators since propagation became a craft, and many systems were devised to this end, although perhaps the main purpose was only sub-consciously understood. The waxing of a dormant graft to exclude air is a method—used for centuries—for the controlling of water immediately in and around the cut surfaces of the graft. The use of double glass or sweat boxes, which has been a standard procedure of good nurseries the world over for a very long time is again directed to the maintenance of a warm, humid atmosphere, heavily charged with water vapor, immediately around the plant material being worked. The greenhouse itself is a structure designed to give the propagator greater control over the natural fluctuations of atmospheric heat and moisture, and thus enable him to exercise a similar control over the development of the plant material in that house. The Wardian case, devised for the transportation of plants over great distances, is but a small well constructed greenhouse, from which the water vapor cannot readily escape so that the air inside can be maintained at close to 100% humidity. The value of these Wardian cases need hardly be mentioned, for it is largely due to their use by plant explorers such as E. H. Wilson that we now have such a wealth of plant material in our gardens, nurseries and arboretums. Apart from rather complex methods of controlling water, such as those already mentioned we come to consider more ordinary means whereby water has been used to advantage. The simple damping down of a greenhouse is aimed at the maintenance of a high atmospheric humidity. The applications of coarse humus material as a mulch around the base of plants maintains a cool moist root run for those plants that tend to be surface rooting. More recently, the application of latex compounds by spraying them on the leaves to reduce transpiration, and the use of sheet plastic for so called air layering—all are different methods aimed at the one problem, the control of water. Water is such a universally available material, and one which is used so regularly that we tend to take it for granted, and certainly I believe to underrate the effect it can have if used in a controlled manner upon the methods which we use. Let us consider very briefly why water is so necessary to the well being of our plants.

The amount of water that a growing plant requires is sometimes astonishing to those who do not have to tend them daily. Even a young oak tree, not more than 30 feet high may loose as much as 50 gallons of water in a single hot summer day. This has to be made up from available water in the soil. It is not mere chance that plants require adequate water at all times, for it is evident from their ancient fossil remains that the first plants were aquatic. When plants moved from the water to the land they did not lose their need for water, but simply modified their structure so that they did not lose it quite so quickly from the surface. Internally, except for a stiffening of the cell walls, there has been little fundamental change, and on the whole, the living cells of internal tissues are quite as moist as if the plants were still back in their ancestral environment.

When we come to consider propagation by cuttings or by grafting we have to realize that this is a critical period for the plant material. Here, for a time, it has lost connection with the original root system which formerly supplied it with water. The ease and rapidity with which it can make a new system (in the case of cuttings) or establish effective union with another plant which already has a root system (as in grafts) largely determines success or failure in such work. In either instance growth of new cells has to take place: in cuttings a whole set of roots has to be produced by the development of a large number of new cells organized into a complex system, in grafts new cells must be formed on the cut surfaces of both stock and scion which can form a union capable of producing both conducting and supporting tissue.

Growth in plant cells is a very complex process indeed, and the living matter in these cells—protoplasm—has to be manufactured. This, like any manufacturing process requires a great deal of energy. It also requires a great deal of water, for like many manufacturing processes, far more water is used during the process than finally enters into the finished product.

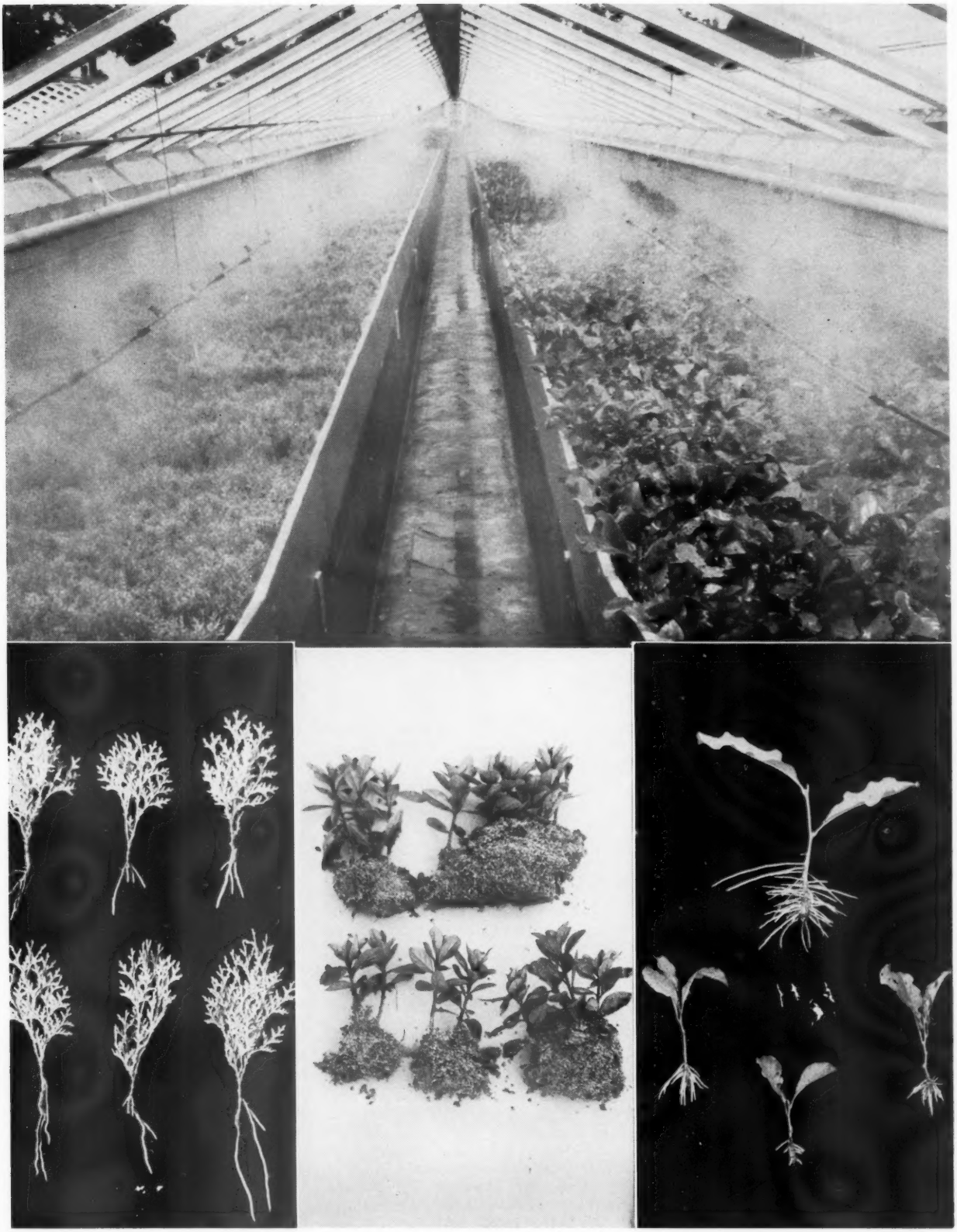
We can carry this similarity a step further. Where the water supply is more than adequate a manufacturer can afford to be a little careless with it. Where water is scarce every drop is precious and it must be conserved with the utmost care. The same thing holds with our cutting or scion. It has been taken from the stock plant where it is to be presumed the water supply was quite adequate and suddenly placed into the precarious position of having no ready means of getting water. That is why, in the case of leafy cuttings or with grafts on which the leaves are retained, it is well to make certain that the material is taken at a time when it is amply supplied with water. This explains the greater success with cuttings taken in early morning after the stock plants were watered well the night before, in addition to the precaution of getting them into the moist propagating medium as soon as possible with no chance of wilting.

The loss of water from leafy cuttings or grafts by transpiration through the stomata is due to the natural law of diffusion of gasses. Stated simply, this says that a gas or vapor diffuses from a point of greater concentration to one of less concentration of that substance.

The loss of water by a plant is called *transpiration*. In the normal plant transpiration, to a large extent, is regulated by small pores (called *stomata*) located in the epidermis on the surface of the leaf. These usually are more numerous on the lower surface than the upper, but some plants have them about equally distributed and a few have them only on the upper surface.

The opening and closing of these minute pores is regulated by a series of factors. The general turgor or plumpness of the tissues of the leaf also reacts on the cells surrounding the stomata; thus when a leaf begins to lose water excessively, the stomata usually close before we are able to detect visible wilting. This closure of the stomata upon incipient wilting of the leaf, even when wilting cannot be visibly detected, has a secondary effect which is undesirable from the standpoint of the propagator. Long continued stomatal closure interferes with normal intake of carbon dioxide by the cutting, thus seriously lowering its ability to make enough food to keep going properly. Incipient but not visible wilting caused by a rise in day temperatures and consequent lowering of relative atmospheric humidity, can lead to slow striking of roots or even failure, because of forced closure of the stomata during daylight hours

(Continued on Next Page)



(Above) Propagation in the open under constant mist. General view of sash house showing benches of cuttings and fog lines. On left Thuja orientalis aurea nana and on right Magnolias. (Lower left). Well rooted cuttings as lifted of Thuja orientalis aurea nana. (Center) All azaleas came out in blocks like this. Kurume variety Addyberg. (Right) Magnolia stellata. Note better roots on larger cuttings.

when they should be open at least for some periods.

This closure of the stomata at the onset of wilting does not completely stop water loss. The normal leaf has a protective coating composed of a waxy substance of one sort or another; however it is not perfect. It is only in true desert plants that the waxy covering approaches anything like a real barrier to water loss, and there it is not absolute. As a result, in the great majority of cuttings and grafts every effort must be made to reduce water loss as much as possible. Under normal conditions no moisture is lost from a leaf in the actual form of water; the water leaves the plant in the form of invisible gaseous vapor. This means that the water vapor is at a higher concentration in the spaces between the cells inside the plant than in the air surrounding the plant, and passes out from the plant by reason of the natural laws of diffusion. Thus is the handling of propagating material the obvious method of cutting down water loss from the plant parts is to bring the humidity of the surrounding air surrounding the cutting or graft up to the point where there is a balance and where no more diffuses out of the plant than can be taken up, even in its temporarily rootless condition. This is the principle upon which all recently applied methods of controlling atmospheric humidity in propagating units are based.

Having considered the basic reasons for the use of controlled humidity, it is now time that we have examined some of the results so far obtained from the use of this system. In so far as my personal experience is concerned it has been an unqualified success on almost all plants tested. Because of an urgent need we have been experimenting with the propagation of rhododendrons from stem cuttings for the past five years, and I can say without hesitation that the use of humidifying equipment has been one of the most important single aids to success. Rooting has been more rapid, more vigorous and the percentage of losses has been lower. In addition, we have been able to try out a wider variety of hybrids and have been quite surprised to find that varieties which we had previously tried and had failed to root to any great extent have rooted successfully under controlled humidification.

As an excellent illustration of this I would cite the variety Kate Waterer. The following tables will explain themselves.

RHODODENDRON
KATE WATERER
TAKEN AUGUST 16th
LIFTED OCTOBER 2nd
MEDIUM 75% PEAT - 25% SAND
NO HUMIDIFICATION

Number Taken	Wound	Hormone	Heavy Rooted	Light Rooted	Not Rooted	Dead	Total Rooted	% Rooted
25	Single Heavy	H 3	—	—	21	4	0	0
25	Heavy	2%IBA	1	1	20	3	2	8%
25	Heavy	3%IBA	1	—	24	—	1	4%
25	Heavy	4%IBA	—	2	20	3	2	8%

TAKEN NOVEMBER 21st
LIFTED JANUARY 22nd
MEDIUM 75% PEAT - 25% SAND
HUMIDIFICATION

Number Taken	Wound	Hormone	Heavy Rooted	Light Rooted	Not Rooted	Dead	Total Rooted	% Rooted
50	Double Heavy	2%IBA	38	6	6	—	44	88%
50	Heavy	3%IBA	35	4	10	1	39	78%
50	Heavy	4%IBA	33	10	7	—	43	86%

Gauging the value of humidification by its effect upon the standard easily rooted variety Rhododendron Roseum Elegans, we have found that cuttings of this plant have rooted in six to eight weeks and have been potted on and removed from the propagating house in ten weeks. Before using high humidification, we considered ten weeks to be fast work in initial removal to the frames. The third year we managed to root some cuttings of 28 different hybrid rhododendrons and of this number 15 could be considered as being rooted in sufficient quantities to be commercially sound. Controlled tests show clearly that, with the combined effect of careful selection and material, careful timing of the operation, special balanced preparation of the rooting medium, strong hormone powders and above all controlled humidification, the commercial production of most varieties of hybrid rhododendrons on their own roots is possible.

Much the same effect has been recorded on Magnolias, Azaleas, Ilex opaca and crenata varieties, as well as a number of deciduous flowering shrubs. Almost without exception, the use of humidifying equipment has increased our efficiency, increased the percentage of well rooted plants while at the same time decreasing the time required to produce them.

Many people who have seen our humidifying system in operation have been astonished at the comparative absence of fungus diseases in the plants grown this way. It seemed reasonable to suppose that such high humidity would increase rather than decrease fungus troubles, but this is not so. The absence of fungus diseases is startlingly complete, and the occasional occurrence of trouble from a fungus is emphasized out of its true proportion because of the comparative rarity of its occurrence.

We have found only one fungus which has troubled us in our houses and that is rhizoctonia. This is a thread-like fungus which looks very much like a heavy spider web. It appears very suddenly on the leaves of some of the cuttings and spreads with extraordinary rapidity. We have found that it can be controlled quite easily by spraying the area with double strength semesan. An explanation of this lack of fungus trouble under high humidity seems to be in order. The general concensus of opinion is that the application of large quantities of water to the atmosphere and to the surface of the propagating beds prevents spores of fungus diseases from travelling through the air. They are pinned down, so to speak, to the surface of the soil and by the steady but minute infiltration of water are carried down below the surface of the soil where their development is inhibited by other soil fungi and bacteria. This seems a very plausible explanation, but whether it is true or not matters little. The fact remains that high humidity does not necessarily mean an increase of fungus troubles.

Constant Mist

The use of a constant mist system should not be confused with a system used to maintain high humidity. The latter applies and required relatively small quantities of water while the former applies fairly large amounts of water. The only similarity is that the same general layout of pipes, and jets is often used for both systems.

As we commenced to use our humidifying lines we quickly noticed that the cuttings directly opposite the jets appeared brighter, cleaner and generally more vigorous than those between the jets, and we could only attribute this to the fact that a small area immediately in front of the jets received a fair amount of free water from the heavy mist. These cuttings looked very much brighter, rooted more rapidly, and generally seemed to thrive on the excessively wet conditions. With this indication before us, we first doubled all jets in the houses with excellent results. Almost all types of cuttings prospered under the conditions which applied excessive amounts of water. To prove this point we used the jet lines continuously, and at the same time applied large quantities of water to sections of the benches from a hose—up to six times daily—in an attempt to kill the cuttings with water. We did not succeed. All cuttings rooted well, but I would emphasize here that the rooting mediums and the benches provided ample and immediate drainage so that no stagnant water was retained.

Following this, and with data from Florida on the possibility of using the fog lines as a constant mist on cuttings inserted in the open, we set up an experimental bench at the end of one of

(Continued on Page 22)

Fire As A Predisposing Factor In Canker Diseases Of Street Trees

P. P. Pirone
The New York Botanical Garden

During the last twenty-five years professional arborists and research workers in shade trees have noted a sharp increase in trunk and branch canker diseases of plane and other street trees.

Jackson and Sleeth[1] first described a highly destructive canker disease of London planes occurring along streets of suburban towns in the "Main Line District" west of Philadelphia. Later Walter, Mook and May[2] studied the same disease in greater detail and named it cankerstain.

Five years ago, I described[3] a new disease of London planes in New York City caused by a fungus in the genus Dothiorella. Later I reported[4] that the perfect stage of this fungus appeared to belong to the genus *Botryosphaeria* and that it was also capable of causing infection in sweet gum *(Liquidambar styraciflua)* and redbud *(Cercis canadensis)*.

Numerous artificial inoculations and reisolations proved beyond doubt that both the cankerstain disease first described by Jackson and Sleeth and later by Walter and his co-workers, and the canker disease described by me were caused by fungi.

Manner of Spread Distinctive

A characteristic common to both diseases is the manner in which they appear along a row of trees planted on one side of the street. The first cases of the Dothiorella canker disease I investigated in 1948, for example, were confined to trees growing on the western side of St. Nicholas Terrace, Manhattan, adjoining the grounds of a religious institution. Not a single case of the disease occurred on trees of the same species growing on the opposite or eastern side of the same street. I noted a similar situation last year in Leif Ericson Park, Brooklyn, where Carl Schiff, Arboriculturist of the New York Department of Parks, showed me dozens of cankered trees.

In discussing the dissemination of the cankerstain fungus, Ceratostomella, Walter and his colleagues[2] state, "In Philadelphia and vicinity there are streets, planted solidly on both sides, on which all trees for the distance of a block on one side appear healthy, while those on the opposite side are diseased or dead."

The bark on the right branch of this London plane is completely gone and the bark on the left branch is severely damaged by fire. ***Photos courtesy the Author***

In the case of the cankerstain disease, at least, the reason for the occurrence of the disease on only one side of the street was thought to be due to the standard procedure followed in pruning trees,—that is, the tree men usually prune trees on one side of a street in consecutive order. They rarely cross the street to prune those on the opposite side.

Walter and his co-workers proved that the cankerstain disease could start in pruning cuts painted with a wound dressing containing fungus-infested saw-

dust or in wounds touched by fungus-contaminated saws, pole pruners and rope.

These findings combined with the pruning procedures followed by most arborists, as described above, have long been thought to be the primary reason for the appearance of the disease on only one side of the street.

Pruning practices, however, cannot account for all of the diseased cases in London planes. On Staten Island, at least, some of the trees afflicted either with cankerstain or canker had not been pruned for many, many years. Some other factor seemed to be involved in the plane canker complex.

Previous workers, of course, had called attention to the importance of such predisposing factors as mechanical injuries to the trunk and roots made during curb installations and by careless adults or thoughtless children.

Mr. Edwin C. Rundlett, arboriculturist of the New York Department of Parks, in charge of the Staten Island area, was first to observe and call to my attention the fact that every tree suspected of having the canker disease was located either in front of an empty lot or where a new house had been built only recently. He concluded that leaf fires in the fall might be a predisposing factor in this disease. Homeowners rarely burn leaves in front of their homes because areas in front of empty lots are far safer. Even boys are more apt to start leaf fires away from homes since they (the boys) would be less subject to the wrath of the homeowners or law enforcement agencies.

Mr. Rundlett's assumption that fire might be a predisposing factor seemed to me to have considerable merit for as near as I could recall, all the trees I examined for Dothiorella canker in the boroughs of Richmond (Staten Island), Brooklyn and Manhattan during the five years and those I examined for cankerstain in New York State and New Jersey during the past fifteen years were situated in front of empty lots, in parks or in front of recently built homes. The streets along which most of these trees were planted were typical of those existing in small cities and towns and not of the concrete building-lined ones of larger cities.

In late May of this year Mr. Rundlett and I reexamined a number of plane trees suspected of having the canker disease in four Staten Island communities. Not one of these trees was situated in front of a home that had been standing for many years. All were located in front of empty lots or near recently built homes.

The following conclusions are based on what I believe occurs in a plane tree after a leaf fire has burned beneath it.

Sparse leaf growth on this London plane resulted from a combination of fire and cankerstain fungus infection.

Deeply fissured bark canker on young plane tree infected by the Dothiorella canker disease. Small, black fruiting bodies of the fungus can be detected on the surface of the dead bark with a hand lens.

1. The lower trunk area subjected to the most intense and direct heat is so severely damaged that no living bark remains above the wood. If the blaze was of sufficient intensity, it is possible to have no living bark on one side of the tree from the soil level up to the very top of a medium-sized tree.

2. The injury to the trunk and branches directly above the fire become less severe as the distance from the blaze increases. Areas from 10 to 20 feet above the blaze show corking over and roughening of the normally smooth bark.

Early in our investigation both Mr. Rundlett and I thought that this corky or proliferated bark was caused by 2, 4-D because this chemical is used each summer by New York's Department of Sanitation to control ragweed and other weeds. The constant association of such corky bark in the upper branches of trees with a history of a leaf fire in the street below leads me to the conclusion that heat from a fire rather than a chemical is responsible for this unusual symptom.

Plane trees will be experimentally subjected to varying degrees of heat from leaf fire this fall in an attempt to reproduce the two types of bark symptoms described above.

Fire May Also Be A Factor In Cankerstain Disease

Mr. Rundlett directed me to several streets in Great Kills area where the cankerstain (Ceratostomella) disease was first found on Staten Island. A number of trees with deep bark fissures running the entire length of the trunk and of the largest branch were still standing near areas where a number of cankerstained trees had been removed six or more years ago. Except for an occasional dead branch directly above the badly cankered area, such trees were still very much alive. It is my personal opinion that leaf fires may also be a predisposing factor in the cankerstain disease and perhaps even with such diseases as bleeding canker of hardwoods reported from Rhode Island and other States.

I would offer the following additional explanation to tie together the predisposing factor, fire, with the primary factors, the fungi, to reconstruct what probably happens at least in the case of London planes growing along Staten Island streets.

Where either of the two causal fungi are present on fire-injured trees and with prolonged rainy spells, death of the entire tree occurs. Trees so affected have been removed and burned in the past.

Where only fire damage occurs and where such damage is localized on one side of the trunk, the tree may continue to live for many years with perhaps the loss of a branch or two on the side of the tree directly above the badly burned area. A number of trees showing this condition may be found on Staten Island at present. Neither the Dothiorella nor the Ceratostomella fungus has

(Continued on Page 20)

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Costs Of Tree Care Operations

By KARL F. AMALIA, *President*
Amalia Tree Surgeons, Inc.
Manchester, Massachusetts

(The following talk was presented before the National Arborist Association at its meeting, August 17, La Salle Hotel, Chicago.)

I would like to discuss "cost figures" about your business. First may I ask how many in this organization use accountants? From the show of hands, I would say that less than half of you do. You should consider your accountant as your "best friend" in business. Accountants should not be considered expensive overhead. They more than save their salaries if you use them properly and follow their directions.

We are all, generally speaking, good tree men, but need to improve our business methods. We spend all of our time getting the business, but very little on administrating the costs. Half of you admit you don't have accountants. Many of the others *do not* work closely with their accountant and fail to use the facts that are available.

Last spring the Directors of the Massachusetts Arborist's Association became conscious of these problems when discussing costs with members of the Association. They decided to call in a good accountant to prepare some average figures so that we could become better acquainted with our costs for operating an arborist business in our part of the country.

The accountant found it very difficult to get proper figures from the members. Many of them admitted that they didn't have the figures. After some effort we did receive proper figures from thirteen firms. Seven of these were profit operating firms. Their profit and loss statements when averaged gave the following information:

REPRESENTATIVE PROFIT AND LOSS STATEMENT BY PERCENTAGES

(Based on data submitted by seven profit operating firms located in Massachusetts)

Income		100%
Less: Direct Costs		
Materials used	9.4	
Direct Labor	36.4	
Field Expense	19.1	
Total Costs		64.9
Gross Profit		35.1
Less: All Expenses		
Selling Expenses	12.2	
General and Administrative	14.3	26.5
Net Profit		8.6

The general hourly charge for the thirteen firms was $2.88 an hour. The seven profit firms showed an average charge to the client of $2.92.

The basic fact that all of us should be interested in if we are going to use our cost figures properly, is "What does it cost *"per hour per man"* for us to operate?" I believe that is the one thing every arborist and businessman should know first. It is surprising how few in the profession, as a whole, know what it costs them to put out a man for one hour.

It is a good question for you to ask your bookkeeper and accountant when you have the opportunity. Ninety per cent of the time you will find the cost much higher than you had anticipated.

I don't wish to bore you with a lot of figures and statistics today. I would like merely to point out the value of working closely with a good accountant. Let me give you an example of this.

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what his costs were and spend a little time with his accountant. In carefully analyzing his costs and going over his books, his accountant saved him $845.00. That man is now convinced that it pays to spend time discussing and analyzing his business with an accountant. Remember, he *is the expert* and knows more than we do about it.

Another mistake that many of us make, is that we don't plan our business in advance. It is alright to get the figures after the business is done to find out if you have made a profit, but this is *too late,* if you show a loss! You should set up cost schedules in advance and see that your employees and departments stick to them. See that such operations as truck, labor, and field costs are kept in line with your proposed "cost plan."

Let us take one item which is a cost problem to all of us—our trucks. Trucks are a large item of overhead in all our business. For many of us, they are a non-profit item. Arborists who do private work, seldom, if ever, are able to use their trucks and charge for them on a daliy basis. You utility men do much better in this regard.

The first thing to do in figuring out truck costs is to find out what the actual cost is to own a truck for one year. It is not as difficult as you might assume. You can set these facts down and work them out for any piece of equipment you own. Let us take your average truck—a 1½ ton Chevrolet stake. The truck costs approximately $2,500.00 and we will assume that you drive it 15,000 miles a year.

FIXED COSTS

Item	*Cost*	*Cost Per Mile*
Depreciation	$500.00	$ .033
Insurance	150.00	.01
License	25.00	.001
Interest on investment at 5%	125.00	.0086
Total		.0526

OPERATING COSTS

Gasoline at 29c gallon	$362.50	$ .0241
Oil	20.00	.0013
Tires	216.00	.0144
Maintenance	100.00	.0066
Towing, parking, tire change, etc.	25.00	.0016
Total		.0480

Fixed Costs	$ .0526
Operating Costs	.0480
Total	$ .1006 per mile

The next thought that arises is how can we get this cost back and make a profit? We work approximately 2,000 hours per year. In private work we are fortunate if we can charge for our trucks half of the time so it means that we must get our costs back in 1,000 hours. We are never able to charge trucks for a whole day year-around. Our total cost for the year is $1,523.50. This means our costs are approximately $30.00 per week. It costs us $1.52 per hour at 1,000 hour rate. This cost compares favorably with truck costs throughout the country.

There are two ways to get this cost back, (1) charge for the truck by the hour or (2) charge it in your overall hourly rate. This is an example of how you can break your costs down per unit.

My main objective in presenting this little discussion to you today, is to convince you of some of the basic facts on costs. All of you work very hard to make your living and you should make a fair day's pay and something for your old age. None of us can hope to be a specialist in every phase of work in a business. An accountant is a highly technical professional expert. He is the kind of expert that can save you money, increase your profit, cut taxes, etc. It is good basic common sense to use him on a regular basis. Find out what your costs are and what you need to charge in your business to make a fair profit. Take the guess work out of it by having him present you a monthly statement of your operations. Lack of proper cost analysis is one of the major factors why businesses go bankrupt in this country.

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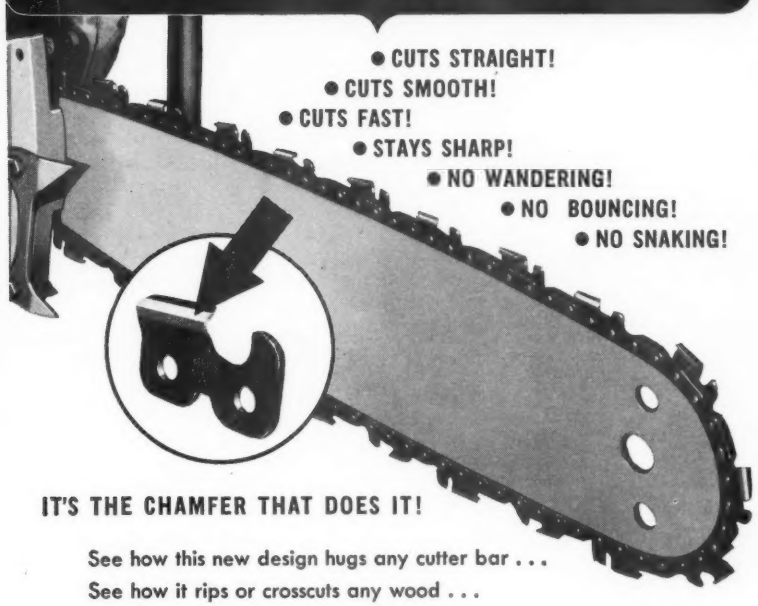

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How the Irisher got into this act we'll never know—L. to R. John Stashenko, Mat Patulski of Porter Cable Co., Dave Calhoon of Porter-Cable, and Tim Janosko. Tim and John had just managed to nose out a couple of old women in the Cross-Cut Saw Contest at the National Shade Tree Conference in Chicago. Their time for a 32" log was three minutes, 18 seconds. Mat Patulski is presenting the winners a new Porter-Cable 110 electric chain saw.

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Antibiotics May Prevent Fire Blight

An Ohio plant pathologist revealed that an antibiotic—streptomycin—may prevent fire blight disease of apple and pear trees.

H. F. Winter of the Ohio Agricultural Experiment Station sprayed Jonathon apple trees, 25 years old, with crude streptomycin at the rate of 120 parts per million during three different bloom stages. A day after the first spray he inoculated the same trees with fire blight disease bacteria.

The streptomycin spray produced 98 per cent control of blossom and twig blight. Check trees receiving the same inoculation but not antibiotic spray developed severe cases of fire blight.

Winter used other types of antibiotics at difierent levels of concentration, but streptomycin at 120 parts per million gave best results.

"We used these materials as blossom sprays," Winter said, "because it's at bloom stage of the tree when fire blight epidemics get started."

The Ohio station plans to make definite spray recommendations for commercial orchadists early next year on how to use antibiotic material. Ample supplies should be available.

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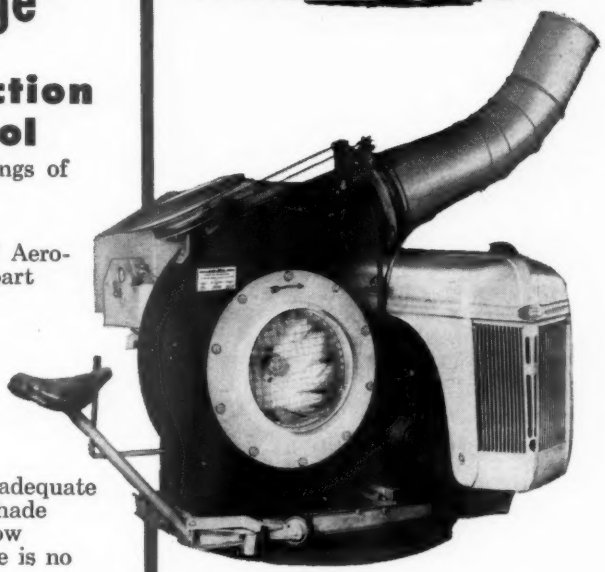
- SPEED—Big volume high velocity air stream, finger-tip controls and 360° revolution of both entire sprayer and also air outlet make quick work of the biggest spray jobs.

With Aero-Mist any municipality can afford adequate shade tree pest control. Complete, lasting, shade tree protection is accomplished quickly, at low cost. Spray any place at any time for there is no damaging drip—no wasteful run-off.
Aero-Mist capacity and power measure up to every requirement however difficult. The air stream easily carries the spray to the crown of the tallest trees. Official tests show killing horizontal coverage up to 1000 feet in mosquito control operations.



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The bright green and sun-flower-yellow package holds two chromium-plated "Snap-Cut" pruners—the full-sized 8" No. 119 and the smaller 6" size No. 118 for women and lighter pruning jobs. To show off these tools to best advantage on the counter and to add to the general attractiveness of the package, the "Snap-Cuts" are packed under a unique, transparent plastic "bubble" cover.

Also included in the "Matched Pair" unit is Seymour Smith's authoritative 28-page book, "How To Prune" which gives complete pruning information to the home gardener.

Designated as No. 1918X, the package is offered at a special price—at less than the cost of the "Snap-Cuts" alone. Suggested retail price, $4.85.

Catalog page and further information on this new Seymour Smith "Matched Pair" pruner gift package may be obtained by writing to Seymour Smith & Son, Inc., Oakville, Conn.

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One man with a Wilton Brush Saw clears more brush than six men with axes and brush-hooks! He'll cut tangled briers, brambles, vines, underbrush, saplings, second growth *horizontally at ground level* — safely, quickly, cleanly. Wilton Brush Saw's light weight, perfect balance, high power and easy mobility are the perfect combination for clean cutting with a minimum of labor and time.

The Wilton Brush Saw is *safe* to use — easy to guide and control, and fool-proof because of simplicity of design with a minimum of moving parts and light weight.

Rugged motor and husky V-belt drive Wilton's non-clogging 8" or 10" saw blade at 3500-4000 r.p.m. at maximum power. No gears to strip — nothing to oil — and built so operator uses both hands to guide its razor-sharp, high-speed blade through all growth up to 4" in diameter. The Wilton Brush saw cuts down worker fatigue, too — speeds tough clearing jobs, and pays for itself in a month or less. Economical to use, and sensibly priced to fit forestry budgets.

FOB, Milford, N. H. $295.00

SPECIFICATIONS

Automatic recoil starter
Blade set at 10° for cutting
Simple centrifugal clutch
1.3 h.p. engine, 3500-4000 r.p.m.
Push-button stop control
Weight, under 30 pounds.
Shoulder strap distributes weight.
2" tubular aluminum shaft with 1/16" thick wall
Entire saw fits in car trunk.
Bearings sealed in oil
Aluminum shield against thigh for perfect balance, easier guiding.

Lower your Christmas Tree cutting costs by 50%
Write for data on sugar-maple tapping attachment

MANUFACTURED BY Williams & Hussey MACHINE CORP.
31 Clinton St., Milford, N. H.

Chain Saw Contest

PHILADELPHIA—Twelve chain saws and $2,000.00 in cash prizes are to be awarded in a "Double Contest" just announced by Henry Disston & Sons, Inc., Philadelphia's 113-year-old manufacturer of power tools.

This is a contest to select the most appropriate names for Disston's two chain saws—the two man DA-211 and the one-man DO-101. There is no entry fee, nothing to buy, and everyone is eligible, excepting employees of Disston, its advertising agency, or its affiliated companies, and their families.

Contestants will find official entry blanks and rules at their Disston dealers or distributors. They, in turn, will help all they can, because there are further prizes for dealers or distributors whose customers win. They will demonstrate the saws, and help the contestants select the points that suggest a good name.

A chain saw will be awarded to each of the six winners in each contest. In addition, there will be a first prize of $500.00 in cash for the best entry in each contest; a second prize of $250.00; a third prize of $150.00 and a fourth prize of $100.00. All entries must be mailed by October 31, 1953, and received in Philadelphia before November 15, 1953.

Want a chain saw without paying for it? Plus cash? Here's the way to do it. Go to your local Disston dealer or distributor, look over the entry blanks and rules, and be sure to get your entry in.

Sagebrush Killed With 2-4-D

A recent report from the U. S. Forest Service announced the successful completion of an aerial spraying project with 2-4-D to eliminate invading sagebrush from perennial grassland forest ranges. This project covered an area of 3,000 acres on the Fremont and Modoc National Forests in southern Oregon and north-eastern California.

The spraying job was done by Demers Flying Service of Salem, Oregon, under a contract with the Forest Service. A converted B-18 bomber and several Stearman bi-planes were used in the operation. The average cost of such treatment is about $3 per acre.

Forest Officials point out that this project, one of many such planned, resulted from successful control of sagebrush by this means in 1951 and 1952. Two pounds of 2-4-D in 7½ gallons of water and diesel oil mixture was applied on each acre treated. This rate of application previously resulted in an 85 per cent to 98 per cent kill of sagebrush.

The maximum effectiveness of this treatment with 2-4-D is limited to the active growing period of the sagebrush —or about a one-month period.

Eliminating invading sagebrush reduces competition, thus permitting increased production of valuable forage grasses. Indications are that grass production will at least double, on areas of suitable soil types, with this treatment. Parts of the treated areas are reseeded when not enough residual grasses are present to naturally reseed themselves in a reasonable length of time. Stockmen permittees on treated ranges have agreed not to graze these areas for a period of two years so that the valuable forage grasses will have every opportunity to make a vigorous comeback.

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Thanks for Your Interest In . . .

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AVAILABLE IN BULK

The Arborists Place In The Civilian Defense Program

V. Leslie Hebert
Tree Warden
Weymouth, Mass.

Throughout the length and breadth of the United States, we are being faced with an increasing number of terrible disasters which have taken a heavy toll of life and property.

The average mind places the cause of these disasters on atomic bomb experiments. Scientists place the cause as climatological—and therefore a natural phenomenon.

It is not the purpose of this paper to place the responsibility of how and why they happen. It is, however, the duty of all who are spared from such disasters to lend all possible aid to those who are stricken, each in his own way according to his training and ability.

First Aid and rescue workers, doctors and nurses, can perform on-the-job services, but mobile equipment, such as fire engines and ambulances, cannot move into or within the devastated areas until the roads are cleared. With streets blocked by hundreds of trees, speed and skill is required to quickly make a way for the evacuation of injured and homeless people.

Herein lies our obligation as tree men, to lend aid *according to our ability*.

Yes, doctors and nurses are first on the list to be summoned; yet it is we who are also needed in that first call, with our chain saws, trucks and winches, and manpower, to make way for the medical aid that has been summoned.

In the Worcester, Mass., tornado, valuable hours were lost in aiding victims. Doctors, nurses, National Guard, police and fire departments were summoned. Nearly six hours after the disaster hit, calls came through State Civilian Defense Headquarters to Massachusetts communities for tree men, chain saws, trucks, and portable floodlight units. Two additional hours were lost in mobilizing my men and equipment, and traveling 50 miles to reach our assignment.

This is not a criticism. A stunned people cannot act. But I do wish to emphasize the need for our services at the beginning of such a disaster.

War could not be more horrible than the destruction caused by these tornadoes. The "sneak attack" of the Worcester tornado, coming as it did at the end of a beautiful summer day when all was calm and serene, in a few minutes time, changed the landscape to a picture of death and destruction over a wide, heavily-populated area.

For years Civilian Defense has been trying to make people of the nation defense conscious—endeavoring to train us in how to properly protect ourselves from enemy bombs and air attack. We do not take it seriously. We must take it seriously!

In the Worcester area thousands of people owe their lives to heeding the warning of Civilian Defense posters and booklets on what to do in a bombing raid.

This disaster has been termed as worse than any bombing. We, at home, must realize: That it might have been us; That it can happen again; That a prompt mobilization of manpower, equipment and medical supplies is necessary to allay panic, keep law and order, relieve suffering and salvage property; That a strong Civilian Defense-minded population can perform these tasks.

High ranking National Guard officers told me that Civilian Defense personnel did an outstanding job at the beginning and that without them, the Guard problems and duties would have increased one hundred fold.

It was through Civilian Defense—That aid was brought to the stricken areas from all over the Commonwealth; that any communications were possible, as all telephones were out; that municipalities from Cape Cod to the Berkshires sent hundreds of auxiliary floodlight units nightly to illumine the devastated areas, protecting property from looters and certainly giving our young Guardsmen some feeling of confidence and courage at their lonely outposts throughout the night under the most gruesome conditions I have ever witnessed.

I cannot too strongly urge that we revive our interest in our local Civilian Defense and take an active part in whatever phase we are best qualified to serve.

Preparedness might be the difference between annihilation or survival.

My Civilian Defense training during World War II is solely responsible for our successful endeavors in Worcester. We knew what to take with us. We were prepared for any task assigned to us.

The courage and appreciation of the people who were victims of this disaster is outstanding. They are taking it wonderfully and their gratefulness is best described in the following letter which I received:

"Dear Mr. Hebert:

We at St. Michael's want you to know how much we appreciate the services you rendered during the recent disaster days here at Worcester.

Mr. Dill, our Warden, told the Vestry that you spent many extra hours helping us and that you sacrificed time which you could have enjoyed at home.

We can only say, bless you and people like you who have helped us so much during these frightening days.

Sincerely yours,
/s/ Raymond E. Fleming,
(Clerk)"

I would like to quote a portion of a paper entitled: TORNADO TREE DAMAGE, by Dr. Malcolm A. McKenzie, Director of Shade Tree Laboratories, University of Massachusetts, Amherst:

"The destruction of trees in certain parts of Central and Eastern Massachusetts on June 9, 1953, from storms accompanied by wind of such strong velocity as to be rare in Massachusetts, exceeded previous records of storm damage to trees in the area.

"In the Worcester area, havoc and destruction were widespread, even though the short duration of the extremely high winds, reported to have reached 500 miles per hour, was indicated as only approximately 5 minutes. Chiefly in a narrow band of relatively low terrain, loss of human life exceeded 90 individuals, mostly from inability to find or seek suitable shelter promptly. Housing facilities of hundreds of people were demolished, along with valuable religious, educational, and other private and public property. Some industrial and agricultural activities together with public utilities suffered crippling losses. Fortunately, losses in all categories were held to a minimum by the smooth functioning of civilian defense organizations, tree officers, arborists, city and state departments, and public utility crews. The rewards of the untiring efforts of these workers from widely scattered cities and towns in opening areas barricaded by fallen trees and wires clearly emphasizes *the need for the services of experienced tree men in a*

(Continued on Page 25)

The KING of them all...

It's the NEW model 5-30 HOMELITE 5.5 Brake hp

One Man Chain Saw

- More Power
- Faster Cutting
- Easy Handling
- Low Maintenance

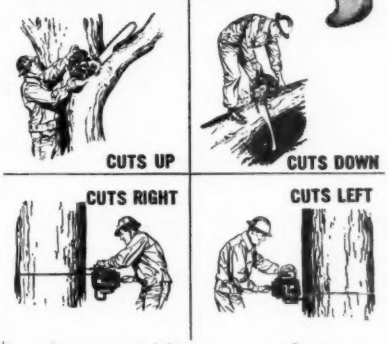
30 pounds—5.5 Brake horsepower

Here is the saw for the man who wants power . . . *extra, dependable power.* It's the saw for the professional woodcutter, the man whose income depends on his saw. It's the saw that gives you more power per pound than any other saw.

Pick it up and handle it. You'll be amazed at its light and balanced weight. Pull the starter and see how easily and quickly it starts. But most important, let it get its teeth in a tree and see how lightning fast it cuts. Watch this powerful Homelite purr through a 20-inch trunk in as little as 20 seconds. See how quickly and easily it brings down timber 4 feet or more in diameter.

Designed and built by Homelite . . . manufacturers of outstanding gasoline-engine-driven units for more than 30 years . . . this new Homelite Model 5-30 has everything you want in a chain saw: Automatic clutch, all angle carburetion, positive chain lubrication, quick starting, weatherproof performance, rugged and simple design and money-saving dependability for which Homelite has been famous for generations.

MODEL 5-30



Cuts in any position . . . up, down, or upside down . . . on all types of cut . . . felling, bucking, boring, notching, trimming or undercutting.

Manufacturers of Homelite Carryable Pumps • Generators Blowers • Chain Saws

PERFORMANCE • DEPENDABILITY • SERVICE

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Canadian Distributors: Terry Machinery Co., Ltd., Toronto, Montreal, Vancouver, Quebec.

LETTERS

Dear Ed:

As usual, I enjoy reading TREES Magazine. I wish to particularly comment on your article entitled, "Several Aspects of Contemporary Street Tree Management." I concur with your observations and conclusions one hundred percent.

I would, however, like to go even further in the planting of trees along the streets. I have for several years been trying to understand the logic of why street trees must be planted at regular intervals along streets. It seems to me that a much more interesting pattern could be achieved if the trees were planted not at regular intervals. For example, is there any reason why two or three trees along a street could not be planted five or six feet apart, developing a mass effect, then an interval of fifty to one hundred feet with no trees at all—maybe a single specimen — then another grouping twenty-five or thirty feet away?

Coupled with this type of planting program there could be an educational program in cooperation with property owners whereby they would supplement the tree planting on the streets with plantings of the same variety of tree either in their front yard or back yard. Ultimately, the overall picture in the city plan would be similar to those beautiful country residential areas where roads have been constructed through the native groves of trees and homes built to preserve many of the trees. This informal kind of pattern always seemed to me much more interesting and stimulating.

The regular planting of street trees along our streets is not, in my mind, a desirable plan. How it came to be I have never been able to determine. Telephone poles and the like are placed at regular intervals for definite engineering reasons. Why do we have to plant our street trees in the same pattern?

Sincerely yours,
WM. PENN MOTT, Jr.
Superintendent of Parks,
Oakland, Calif.

Editor, TREES MAGAZINE

Perhaps you remember Cincinnati and the Tree Climbing Contest based on speed . . . as the winner sailed through the tree on his half inch Manilla life line there was a terrific volume of criticism handed out by the "Big Brass". The cry was, "Speed and safety don't mix." O yeah!

Thursday P. M. August 20 a Ralston climber, Jimmy Saunders, was clearing the Edison wires on the street in Waban, Massachusetts. A big oil truck pulled into a driveway close by the tall Red Oak in which Jimmy was working. Small flames started to pop out from the truck. The driver backed out, leaving his truck directly under Jimmy the skinner, and ran like H. The 1600 gallons of oil exploded, shooting flames and parts of the truck 100 feet straight up.

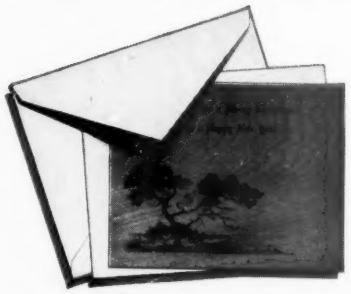
The tree crew men were commenting "Poor Jimmy, he *was* a good climber even if he did leave a stub now and then," when they noticed Jimmy calmly perched on the far side of the Oak, Forty feet from above the truck. With a high crotched rope Jimmy was able to fly through the air instantaneously. He beat the explosion by not more than one tenth of a second, that was enough.

Instead of being fried like an egg, as he said, he only got a fine hair singe, which would have cost him a dollar fifteen in a barber shop.

Ralston still teaches his men to move fast in a tree if speed is needed. With sky lifts and 60' pruners coming in, expert climbers will soon be relegated to Madame Toussard's Wax Museum.

When this old timer watches tree men sitting on their backsides engaged in a thimble wrapping contest, he will always remember the roaring crowd at Cincinnati.

By J. Cooke White
Fred Ralston & Co.
Allston, Massachusetts



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NEW POLE SAW HEAD

Tough aluminum, light weight, with outside horn for crotching climbing ropes, clipping deadwood, etc. Has new brush holder that really holds brush. Choice of two Seymour Smith blades. No. 20B-16", 8 pts. to inch, and No. 21B-17", 6½ pts. to inch. Latter has only slight curve.

Complete Line of Tree Surgery Supplies

Fruit Growers of Chester County, Inc.
West Chester, Pa.

P. P. Pirone

(Continued from Page 10)

been found in cankered bark of such trees.

Associated with many of the badly cankered areas in many trees are several species of insects. Most common are the American plum borer *Euzophera semifuneralis* Say and the curculio *Conotrachelus anaglypticus Say.*

This article is presented with the hope that investigators of canker diseases in shade trees growing along city streets consider Fall leaf fires as a possible predisposing factor. In addition I hope that persons entrusted to the care of shade trees in our cities and towns publicize the great harm that may befall trees when fires are made near them.

(1) Jackson, L. W. R. and Bailey Sleeth. Phytopathology 25: 22. 1935 and Forest Leaves 27 (No. 2). 1937.

(2) Walter, J. M., P. V. Mook & Curtis May. Arborist's News 5: (No. 7) July 1940.

(3) Pirone, P. P. Proc. 24th National Shade Tree Conf. 1948.

(4) ————Phytopathology 43 (No. 1) 16. 1952.

Electric Bar Groove Grinder Available

OREGON BAR GROOVE GRINDER, a new electrically driven tool to be used by filing shops and chain saw dealers in regrooving and reconditioning saw bars, has been announced by Oregon Saw Chain Corporation, Portland, Oregon saw chain and bar specialty firm.

The new tool operates from any 110-115 volt AC current outlet and will widen and deepen bar grooves on any make of saw bar to fit .050 and .120 gauge chain. Only four square feet of bench space are required to accommodate this grinder, which is housed in a steel casing mounting a surface plate which may be hand adjusted up or down precisely to center the grinding wheel in the bar groove.

Grinding is accomplished with 8" resinoid bond abrasive slotting wheels specially manufactured for use on the machine, and available in six different thicknesses. The electric motor is a heavy duty capacitator type and is equipped with a thermal overload protector. Total shipping weight of the new grinder is 116 pounds. Cost is $110 fob factory.

Complete information on Oregon Bar Grinder is available from Oregon Saw Chain Corporation, 8816 SE 17th Avenue, Portland 2, Oregon.

PRATT'S Sprays

Pratt's Sprays are formulated for use in mist or hydraulic sprayers to give the greatest degree of safety and effectiveness for shade trees and evergreens.

SCALECIDE—The oldest and best known dormant oil spray. Contains 96% highly refined, highly paraffinic dewaxed oil. Use Scalecide for the control of scale, aphis, red mite, and over-wintering insects on shade trees, fruit trees, evergreens and ornamentals.

PRATT'S SUMMER SPRA-OIL—A miscible 97% white oil type summer oil. For use in the control of red spider, scale crawlers, white fly and as an effective ovicide, also used as a dormant spray for evergreens where a lighter oil is desired.

D-X INSECT SPRAY—One of the most effective non-poisonous sprays for sucking and chewing insects of shade trees as well as fruit trees. Contains rotenone, pyrethrum and piperonyl cyclonene for great effectiveness and safety.

PRATT'S DDT SPRAYS—Pratt's DDT sprays are especially formulated for the safety and effectiveness demanded in shade tree work. Pratt's Emulsifiable 25% DDT —Pratt's S-30% DDT and Pratt's dry wettable 50% DDT.

Order Pratt's Sprays from your distributor. Bulletins available — Pratt's Oil Sprays, Pratt's Sprays for Mist Blowers and Hydraulic Spraying.

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Hackensack, N. J.

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MILLER-ROBINSON
Limb Loppers and Tree Saws To CUT Tree Trimming Costs
30-50%!

That's right! Thousands of installations have indicated time savings of up to 50%!

And... you don't have to worry about Miller-Robinson air-powered equipment breaking down. It will stay in operation year after year... cut clean and fast... do the job better. The reason? It's manufactured by pioneers in the field... each item proved by years of service.

Models available for every need, including insulated models for protection against accidental electric shock. Compressor units, fittings, hoses, accessories. Suggestions on compressor jeep, platform, or tractor mounting available.

Miller-Robinson equipment may be obtained throughout the United States from machinery dealers or supply houses, or direct from the factory where local outlets are not convenient. Every effort will be made to have a qualified representative call upon you with equipment and make a field demonstration on your work.

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NEW Land Clearing Tools Remove Trees, Brush F-A-S-T

The proven best and cheapest method of clearing trees up to 12" base diameter and all brush is with the Johnson GRUBBING TONGS. ALL TREES—Maple, Beech, Locust, Willow, Sycamore, Oak, Spruce, Hemlock, fruit trees, etc., come out easily, quickly, permanently—ROOTS AND ALL! No pick or mattock necessary. Hook the TONGS around the growth and pull. No freezing or slipping. Heavy steel construction. Better than bulldozing or log chains. Every farmer needs one. If your dealer cannot supply you, order from us. PERFORMANCE GUARANTEED OR MONEY REFUNDED. Send check, M.O. No COD's. Write for folder.

MODEL 52
(Trees up to 5" Dia.) use with any tractor. Weight 19 lbs.
$9.85 ea.
Add $1.45 P.P. and Insurance West of Miss. $1.95

MODEL 121
(Trees up to 12" Dia.) For larger than 5" trees requires tracklayer (Crawler) or half-track tractor, or wheel type with 10,000 lbs. draw bar pull. Weight 36 lbs.
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RE-BO MFG. CO., Inc.
327-B Madison Ave., New York 17, N. Y.

(Continued from Page 8)

our sash houses. All the sash were removed on both sides of the house, and the bench, which did not have bottom heat and was normally filled with soil, was dug out to a depth of 12 inches below the top of the side boards. This space was then filled with three different rooting mediums. One section plain sharp plaster sand, such as we normally use for all our propagation, one section with a 50-50 mixture of the same sand and acid Dutch peat, which is our normal azalea mixture, ph 4.0, and the third section 90% acid Dutch peat and 10% sharp coarse sand of a gritty type. This last is our usual rhododendron mixture. The benches were filled within an inch of the top, giving a depth of 11 inches and gently firmed. It was not packed solid. Once the bench was filled, it was well watered down with a coarse hose to make certain that the medium was thoroughly moist.

Commencing on the third of July, we began to insert cuttings of many different kinds into this bench, taking 25 or 50 of a kind as the cuttings were being made in quantity for our normal summer propagation schedule. Treatments were in every case exactly the same as for the large batch of cuttings, no variation being allowed both on the type of cutting and the method of hormone treatment, if any. Once made the cuttings were inserted into that section of rooting medium which corresponded to their normal requirements. For instance all rhododendrons were inserted in the heavy peat mixture, all azaleas in the 50-50 peat and sand mixture while Magnolias and other items were inserted in the plain sand. The fog line was started from the moment the first batch of cuttings was put in and remained in operation throughout each day without stopping, excepting only for brief interludes when additional varieties of cuttings were inserted. This usually did not take longer than ten minutes.

During the period of the experiment the weather was abnormally hot and dry with little or no rain and daily temperatures above 90, excepting only one day when we had nearly six inches of rain. Our highest recorded day temperature was 95 on July 23rd, the highest night temperature 77 on July 19th. For not less than 10 hours daily the fog line suspended over the bench was running, rain or shine, without interruption. Occasionally during the really hot nights the line ran for 24 hours daily and as a result almost exactly 30 gallons of water per square foot was deposited on the bench each week. This means that for the 13 weeks that the test was operating, approximately 390 gallons of water was applied as a fine mist to each square foot of bench. There was a slight variation between the points directly beneath the nozzles and those at the side of the bench, but this is an average figure. The following list of plants was tested under this system: .

Azalea Amoena, Azalea Amoena Cocc., Azalea Claret, Azalea Elizabeth Gable, Azalea Fedora, Azalea Fireball, Azalea Herbert, Azalea Hino. (Double), Azalea Hino., Azalea Hino. Crimson, Azalea Louise Gable, Azalea Othello, Azalea Rose Greely, Azalea Rosebud, Azalea Salmon Beauty, Azalea Sherwood Red, Azalea Snow, Azalea Mrs. Wery, Azalea Wilhelmina Vuyk, Cornus Florida Flora Plena, Euonymus Japonica Var., Enonymus Patens, Juniper Pfitzer, Juniper Sabina, Juniper Stricta, Magnolia Soulangeana, Magnolia Soulangeana Nigra, Magnolia Stellata, Magnolia Stellata Rosea, Pieris Japonica, Taxus Cuspidata Spreading, Thuja Aurea Nana, Thuja Occ. Woodwardii, Thuja Pyramidalis.

Results

The results were of course variable, but were sufficiently good on many plants—outstandingly good on some—to justify large scale productions by this method the following year. The results here given are a compilation of two years work and propagation in this way.

Azaleas

Without exception all azaleas rooted rapidly and without loss. This was one of the outstanding successes. However, it is clear that the medium needs to be a 50-50 mixture of coarse sand and acid peat. Plain sand is not satisfactory. The azalea cuttings after rooting were lifted and transplanted without loss and the plants developed quickly and were better in every way than those produced in an orthodox manner.

Magnolias

These also were outstanding. Rapid and vigorous rooting with the minimum of leaf drop. All cuttings when potted on, rapidly took hold and developed without loss. Plain sand is the best medium.

Taxus

Equally satisfactory, but hard cuttings from old plants had to be used. If the cuttings had been inserted slightly earlier they would no doubt have produced a larger and more developed root system. However, the cuttings rooted 100% and all developed after potting without loss.

Conifers

Results on some of the Junipers were poor, but this I believe was due to the type of wood used. However we did have one outstanding success which has proven by large scale production in the second year. This was Thuja orientalis aurea nana or the Berckmann's Golden

NOW

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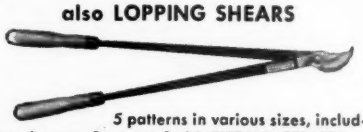
PRUNING SAWS

that CUT FASTER LAST LONGER

Specially designed for arborists and other professional users. A complete line of 7 patterns covering all requirements up to chain saw work.

Blades — made by Sandvik of famous Swedish charcoal steel — have fast-cutting, large, deep teeth with heavy set to prevent binding. Handles are of laminated hardwood, streamlined and free from horns and projections.

also LOPPING SHEARS



5 patterns in various sizes, including the new Seymour Smith TIFFANY PRUNER.

TREE PRUNERS

No. 11 Pruner Head

No. 11 "Telephone" tree pruner head, with 1" capacity and No. 12 with 1½" capacity are the finest available. Also rugged poles of selected spruce with seamless aluminum joints.

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No. 20 Saw Head

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OUR 104th YEAR

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Biota. This plant is propagated from cuttings in large quantities in the south, but try as we may, we could never root more than an odd cutting. One year I recall that we took batches of cuttings at two week intervals from June to the following February with all types of hormones, mediums wounding and so on, but still without results.

Now one of the factors reported from the original users of the constant mist system was that under these conditions, and without any protection whatsoever, it had been possible to root many plants which could not be rooted under normal greenhouse conditions. It was this possibility of rooting really difficult subjects which first attracted me to the system, and I determined to test Berckmann's Biota. A small group of 100 cuttings—was inserted early in July and the final result on the first test was 84% rooted, a much higher percentage than we have ever attained before. The second year a larger block of 10,000 cuttings was inserted, in plain sand early in June using really soft growth. Rooting was good, particularly on the somewhat larger cuttings. The difference between the vigor of rooting on small and large cuttings was most marked, a result which I had not expected. At this time —September 1st—a high percentage of the cuttings have rooted and await potting.

So much for our experience. What of other growers? What are the results coming in on different plants and under different conditions?

I have been in correspondence with a number of propagators in different sections of the country, and without exception, reports are not only favorable, but enthusiastic. Mr. Templeton at Winchester, Tennessee has developed a portable propagator, using wire concrete reinforceemnt covered with a plastic sheet, and under this he has fitted a water line so that a fine mist can be applied to the beds throughout the day. After six weeks he removed the top covering and the water line and allows the cuttings to harden off and continue growth in a normal manner. His method appears to be simple, foolproof, and efficient. It is based upon the generous use of water. A grower in Texas reports vigorous rooting of all forms of Ilex in the open under irrigation, while another grower in Missouri reports rapid rooting of a wide variety of plant material using large "cuttings" which once rooted, are already well formed young plants. The generous use of water induces this old wood to root, and to root vigorously. The use of water in this way is only now becoming general, and the amount of information available is scant. However, from what we know, from what we see and hear there is no

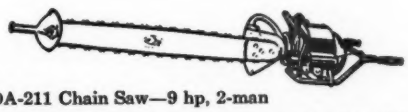
(Continued on Page 26)

Win one (or two)

Disston Chain Saws plus one (or two) Big Cash Prizes!

Think of it! All you need do is suggest a name for either the Disston DA-211 Chain Saw, or the Disston DO-101 Chain Saw, or both . . . just get your dealer to demonstrate for you . . . then tell in ten words or less why you chose that name—and you stand to win in Disston's great new DOUBLE contest! And look at this DOUBLE list of prizes:

Contest #1



For naming the Disston DA-211 Chain Saw—9 hp, 2-man

1st prize	$500.00 cash and a DA-211 Chain Saw (approx. value: $495.00)
2nd prize	$300.00 cash and a DA-211 Chain Saw
3rd prize	$200.00 cash and a DA-211 Chain Saw
4th prize	$100.00 cash and a DA-211 Chain Saw
5th & 6th prizes	—each a DA-211 Chain Saw

Contest #2

For naming the Disston DO-101 Chain Saw—
1- or 2-man, versatile, lightweight

1st prize	$500.00 cash and a DO-101 Chain Saw (approx. value: $322.00)
2nd prize	$300.00 cash and a DO-101 Chain Saw
3rd prize	$200.00 cash and a DO-101 Chain Saw
4th prize	$100.00 cash and a DO-101 Chain Saw
5th & 6th prizes	—each a DO-101 Chain Saw

BUT REMEMBER—get your dealer or distributor to help you to enter either or both contests, *you must have official entry blanks.* You can get them FREE, along with contest rules and instructions, from your nearby Disston Chain Saw dealer or distributor. If you don't know his name, write us. Go to your dealer and get your contest entry off this week sure! Contest entries must be postmarked Oct. 31, 1953, or earlier.

DEALERS

Special cash prizes for you, too! Ask your Disston distributor or write us for details.

HENRY DISSTON & SONS, INC.
70 I Tacony, Philadelphia 35, Pa., U. S. A.

NAA NEWS

By PAUL E. TILFORD, *Secretary*
Box 426, Wooster, Ohio

National Arborist Association Meetings

Discussions on costs of tree-care operations, industry statistics, safety, accident prevention, line clearance and equipment, made up the Monday, August 17, program of the National Arborist Association meeting at Hotel LaSalle, Chicago.

The discussion on Costs of Tree-Care Operations as presented by Karl Amalia is given on page 12 of this issue of Trees Magazine.

Accident Prevention

An excellent talk entitled "Accident Prevention Experiences" was given by Edward C. Shearer, Field Manager, Farrens Tree Surgeons, Inc., Jacksonville, Florida. Mr. Shearer prepared the following brief resume of his talk:

"Farrens Tree Surgeons, a line clearing company with which I am associated has been confronted with a serious accident problem.

" We have been striving to reduce accidents in a number of ways. We have kept a detailed record of accidents based upon their frequency, severity and classification. This has helped us to determine in what areas and what types of accidents we should devote most of our time and effort.

"Knowing that education is basic in solving accident problems, we have directed a stream of information both to the area managers and to the foremen. This has consisted of:

To the Area Managers;

1. Monthly Accident Report—covering the location, name of injured, extent of injury or damage, number of days lost time, if any.
2. Accident Prevention Bulletin — describes each accident in detail and recommends a solution to prevent a recurrence.
3. Occupational Hazards — a monthly safety magazine.
4. National Arborist Association Reports—giving industry-wide accident news.
5. Special Bulletins, news letters especially suitable for management.

To the Foremen:

1. Accident Prevention Bulletin.
2. Trees Magazine.
3. Foremen's news report — containing safety news items.
4. Posters—issued monthly.
5. Special Accident Prevention Program.

"Because automobile accidents represented 33% of our accidents last year, we organized in January a drive for improvement through the medium of a monthly lecture by the area managers to each crew based upon information provided in a supervisor's manual edited by our insurance carrier. The discussion is limited to some specific subject concerning driving so that the maximum benefit is obtained.

"Incentives are equally as necessary as education. Every six months each foreman receives a bonus based upon his accident record. Likewise the area manager receives a bonus based upon the Company record.

"It is rather difficult for us to evaluate results. In terms of frequency 1952 improved 47% over 1951, but our lost time accident ratio improved only 20%. The greatest improvement has occurred in our automobile experience. Total yearly losses dropped from $15,000.00 to $5,000.00 in two years. In 1951 we were able to bill $5,000 in sales before an accident occurred; in 1952 $7,000; in 1953 $9,000.

"Today our people are still working unsafely and there is a great deal of room for improvement, but we continue to believe that any effort based upon the keeping of records, education of the employees, and a program of incentives will reduce accidents substantially."

Safety Bulletin

"Safety for Tree Workers" written by A. Robert Thompson and published as Tree Preservation Bulletin No. 8 by the U. S. Department of Interior has been the best and most complete treatment of this phase of safety. It still is our most useful publication on the subject but in many respects is outdated and needs revision. Many new tools, methods and operations are used in tree-care practices today which were not known 16 years ago when "Safety for Tree Workers" was written.

The Association's Safety Committee is revising the original "Safety for Tree Workers." Within the coming year the Association expects to have an up-to-date safety manual for tree workers. Karl Kuemmerling, Canton, Ohio, is chairman of the Safety Committee. Other members are—Edwin E. Smith, Smith Tree Service, Lansing, Michigan; C. L. Wachtel, Wachtel Tree Science & Service Co., Wauwatosa, Wisconsin; J. Cooke White, Fred Ralston & Co., Boston, Mass.; and John Woodruff, Oscar F. Warner Co., Waterbury, Connecticut.

Line Clearance

Charles Scott, Public Service Company of Northern Illinois, gave an excellent talk on Line Clearance Problems. Kodachrome slides were used to illustrate the talk. The solution to the overhead wire and tree conflict can only be reached through the cooperation of the utility-construction engineer, the public officials in charge of the trees, and tree service companies who trim the trees. Good construction that will not interfere with the trees more than necessary, intelligent planting in the vicinity of wires, and good trimming all put together is the solution to this problem.

A short colored movie was shown by Roger Sohner, San Anselmo, California, on the use of mechanical equipment in his tree-trimming operations in California.

President of Arborists

J. GERALD CORR
President
National Arborists Association

Business Meeting

The Association's annual dinner and business meeting were held Tuesday evening with President Sidney McNeal presiding. Officers elected for the ensuing year are as follows: President—J. Gerald Corr, Trees Incorporated, Houston, Texas; First Vice-President—H. N. Engledow, Midwestern Tree Experts, Indianapolis, Indiana; Second Vice-President — Hackett C. Wilson, Wilson Tree Company, Shelby, North Carolina; Secretary—George W. Goodall, Goodall Tree Expert Company, Portland, Maine; Treasurer — Henry Vaughn Eames, Eames Tree Expert Company, Plainfield, New Jersey. Immediate Past-President is Sidney McNeal, McNeal Tree Service, Tiffin, Ohio, and Paul E. Tilford, Wooster, Ohio, continues as Executive-Secretary.

James T. Turner, Turner Tree Service, Atlanta, Georgia, was elected to the Board of Directors for a three-year term. Roger Sohner, Sohner Tree Service, San Anselmo, California, continues on the Board for two more years, and Ray Gustin, Gustin Landscape and Tree Service, Silver Springs, Maryland, has one more year to serve.

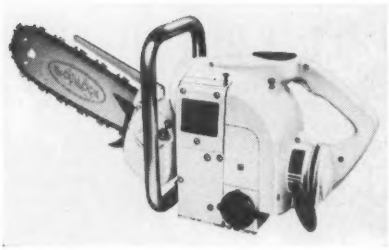
The Association expects to hold its winter meeting in Washington, D.C., sometime after the first of the year.

New Low Priced Saw

A new low-priced chain saw that weighs only 20 pounds complete with blade and chain was announced this month by McCulloch Motors Corporation, Los Angeles. Because of its extreme light weight and ability to saw full power in any position without adjustment, the new McCulloch Model 33 chain saw is ideal for tree removal, pruning, tree surgery, and many types of heavy construction sawing. The saw is designed to fell trees within one inch of the ground.

Although the Model 33 is the lowest priced saw in the McCulloch line, it offers all the well-known McCulloch chain-saw features, including automatic clutch, automatic rewind starter, all-gear transmission, fully enclosed flywheel, air filter, anti-friction bearings, manual chain oiler, plated blade, handlebars, and muffler, and waterproof Bakelite-encased coil. All parts normally requiring inspection, such as spark plug or points, are easily accessible.

The saw is equipped with a new fast-cutting, narrow-kerf Sabertooth chain, and either 12-inch or 16-inch blades. It is powered by a special light-weight McCulloch gasoline engine with three-ring piston, hard-chrome-plated cylinder wall, and deep-finned aluminum-alloy cylinder with removable head.



McCulloch Model 33 chain saws are sold through authorized McCulloch dealers in United States and Canada. Price of the saw is $225, f.o.b. Los Angeles.

Defense Program

(Continued from Page 18)

disaster. The critical preliminary tree work necessary for the rescue of people and the salvage of property with all possible dispatch may well be a matter deserving constructive action for integration in future civilian defense or ganization programs."

I feel a strong sense of duty to bring to your attention the urgent need for our services in times of disaster, FIRST not LAST, and to urge you upon returning homeward to seek out your Civilian Defense director, list your equipment and manpower with him.

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Dark Green must be ordered NOW.

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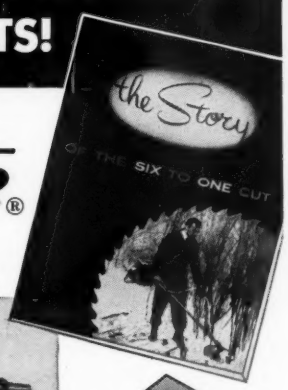
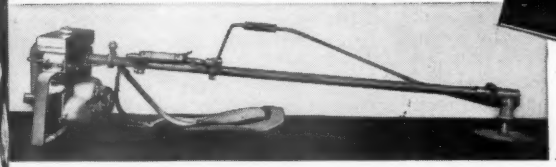
with amazing, power-driven

BRUSHMASTER®

THE SAFE, EFFICIENT METHOD OF MAINTAINING RIGHT-OF-WAY CLEARANCE





ONE MAN ACCOMPLISHES THE WORK OF 6 HAND-CUTTERS!

Hundreds of American industries are showing big savings with the Brushmaster Saw. It cuts brush, from matted grass to saplings 4" in diameter or over, including vines, honeysuckle, thorns, etc. It's *safe* . . . operator can not come into contact with saw blade! It's *mobile* . . . goes anywhere a man can walk . . . operates freely from right to left, close to ground or overhead! Vibration-free, clutch-controlled, positive drive.

FREE!

This colorful booklet tells how machine magic has made all previous methods of brushcutting obsolete. Send for it today.

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Authors and Books

The following books may be ordered from TREES Magazine, 7621 Lewis Road, Olmsted Falls, Ohio.

GARDEN ENEMIES, by Cynthia Westcott. D. Van Nostrand Co., IInc., New York. 261 pgs., illus., $3.50.

To anyone having Dr. Westcotts two books "Plant Disease Handbook" and "The Gardener's Bug Book" this is an excellent companion piece. Specificially it is intended for the home gardener and goes into excellent detail in outlining the descriptions of various disorders so they may be identified and the proper remedy applied. Controls make use of the latest chemical developments, which we thought was an oversight in the "Bug Book." This is about as up to the minute in respect to control as any publication we have seen.

This would be an excellent book for Arborists and Nurserymen to give to special customers for Christmas.

Dutch Elm Disease Carrier Found In California

For the second time, the Smaller European elm bark beetle, primary transmitting agent for the Dutch elm disease, has been found in California. However, Dutch elm disease does not occur in this state.

The second infestation has been reported to the California Department of Agriculture from Redlands, San Bernardino County. The first record of the beetle's presence in California was made about two years ago in the vicinity of San Jose, Santa Clara County.

In both instances, the beetles were found on elm trees.

The Department looks upon the infestations as important inasmuch as Dutch elm disease, spread by this pest, has caused the loss of many elms in the Eastern states.

It is not known how the bettle got into California.

Pacific Coast Nurseryman.

Propagation–Wells

(Continued from Page 23)

doubt that growers throughout the country are discovering anew the vital "power of water" in all forms of plant propagation. It is being recognized also that this is no insignificant factor, but one of vital importance in all branches of our work, and that just as the power of water is harnessed and used for the benefit of industry, so in a slight different but equally important manner, can water be directed to help us in our work of propagation and production of plants.

Plant Propagators Society
December 10, 11, 12, 1953
Wade Park Manor
Cleveland, Ohio

DON'T BE FOOLED BY IMITATIONS

The Bartlett Compound Lever Tree Trimmer has been successfully manufactured for many years and like the story of the man who made a "Better Mouse Trap," it is flattering to know that a product is worthy of imitation but like so many attempts to take the credit for originality, those who copy soon find themselves "out on a limb," and speaking of limbs, why not compare the Bartlett No. 1W Pulley Type Tree Trimmer with others on the market to make sure you are not being fooled.

Bartlett tree trimmers, as well as all of our other products, are made of the highest grade materials obtainable and we will continue to serve our customers to the best of our ability to give them full value for years to come.

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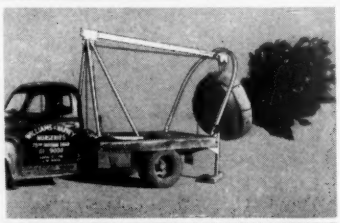
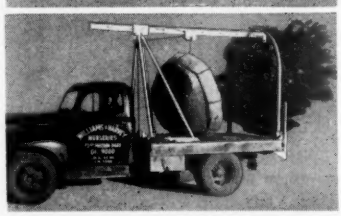




Williams & Harvey Nurseries Announce

NEW TREE MOVER

- New Light Weight
- Simpler to Operate
- Two Sizes, 6′ and 7′
- Quickly Demountable
- New Lower Costs

This improved new tree mover fits any standard truck. Ready now. Write us for specifications. Six-feet mover as pictured: complete with power winch and all needed pick-up parts: F.O.B. Kansas City, Mo. **$1375**

WILLIAMS & HARVEY NURSERIES
P. O. Box 8822 Kansas City, Mo.

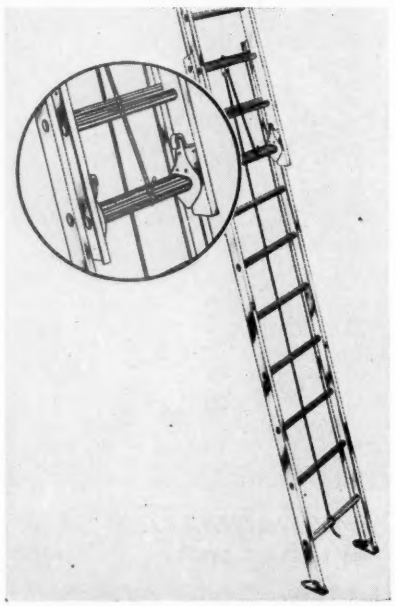
Werner Introduces New Line of Alumiladders

R. D. Werner Co., Inc., 295 Fifth Avenue, New York 16, N. Y., have added a line of lower priced extension ladders to their aluminum ladder lines. Called the 500 series, the line is designed and priced for the big do-it-yourself market and mechanics. It is available in single ladders from 6 ft. to 20 ft. and in two section extensions from 20 ft. to 40 ft. (The 900 series, made for industrial use, also has three section extensions from 40 ft. to 52 ft.)

The new Werner 500 series is constructed for lighter weight of tempered aircraft type aluminum. Its outstanding design features are four-point swaged rung joints, recently developed by Werner engineers. This new, much stronger construction method, plus U-channel side rails, give these light weight ladders extreme stability.

Each Alumiladder has gravity type aluminum locking devices which are absolutely positive in their action. Ropes, pulley and safety shoes are standard equipment at no extra cost.

Werner Alumiladders are manufactured complete at the Werner plant in Greenville, Pa.—where all the extruded rungs, rails, etc., are produced on Werner's own powerful extrusion presses and parts are assembled into the finished ladder.



DOW

BASAL BARK TREATMENT GIVES GOOD CONTROL IN ALL SEASONS

Spraying brush and trees with ESTERON BRUSH KILLER or ESTERON 245 is effective all months of the year

Basal spraying may be done any month in the year. It should be planned to supplement your regular foliage spraying program, to keep your crews busy and your equipment in use the year around. This important maintenance practice—spraying Esteron® Brush Killer or Esteron® 245 in oil on the basal 12 to 15 inches of brush stems or tree trunks—has won an important place in brush control programs.

Esteron Brush Killer is a mixture of low-volatility propylene glycol butyl ether esters of 2,4-D and 2,4,5-T. Esteron 245 contains the same type esters of 2,4,5-T only. Basal treatment with either product is done with a knapsack sprayer or with power equipment. It gives good results, regardless of the size of trees, provided that the basal area is thoroughly drenched to the point of run-off. Frilling or axe-girdling large trees decreases the amount of chemical required. Spraying cut stumps to prevent resprouting, a useful variation of basal treatment, may also be done in all months of the year.

Dow sales and technical men are available for consultation and assistance on your brush control problems. Illustrated literature is yours on request. THE DOW CHEMICAL COMPANY, Agricultural Chemical Department, Midland, Michigan.

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